

# ***Medical Records Data Quality (Individual Identity)***



***TRICARE Data Quality  
Course  
May 20-22, 2008***

USAF  
Chief Medical Officer  
CITPO

# Agenda

- Electronic is not the same as paper
- Systems dependence on identification – registration
- Data entry issues
- Mistaken Identity
- U.S. Air Force's role at the CHCS-level
- The “Hemorrhage” analogy
- Attention to all levels of the organization
- More progress in the future

# Electronic is different from what we are accustomed

- Newtonian documentation
  - Paper records
  - Visual/Sensory clues
  - Single authoritative copy
  - Human problem solving
  - Images, waveform and multimedia maintained separately
- Electronic documentation
  - Non-physical record
  - Data in bits and bytes
  - Multiple copies possible
  - Weak automated problem solving
  - Potential to include images, waveform and multimedia

# Individual identification is critical

- What is your identity?
  - Demographics (name, DOB, numbers)
  - Relation to payor, employer, system
- Have you been seen before?
- Do you have insurance coverage?
- Do you have an entitlement to care?
- What is your eligibility level of benefit?
- Do you have any previous documentation?

# Individual identification CHCS/CDR

- If not registered on the local Composite Health Care System (CHCS) host:
  - Cannot make an appointment
  - Cannot make a telephone consultation
  - Cannot order consults, lab, pharmacy, x-ray, etc.
  - Cannot retrieve results
  - Cannot credit services rendered or resources consumed
- If not registered with the Clinical Data Repository (CDR) associated information is unavailable

# Registration is not automated

- Registration in CHCS is not automatic
  - Military personnel system is not capable, timely, or standardized
  - AHLTA CDR is not a registration tool
  - Defense Enrollment Eligibility Reporting System (DEERS) only provides notifications that might auto-register a patient in CHCS for beneficiaries enrolled in TRICARE Prime
  - Enterprise Wide Scheduling and Registration (EWS-R) phase II is not deployed

# Impact of errors broadly felt

- Registration is local-server specific
- Erroneous records existed long before AHLTA
- Commanders are briefed on local burden monthly
- Tools to detect local errors are limited
- Became Enterprise-wide issue when AHLTA was released
- Current burden of enterprise-wide errors
  - Legacy burden (older errors, undisclosed errors)
  - Ongoing error generation of errors

# Mistakes have serious consequences

- Corruptions of CDR records
  - Patient Safety Risk is real:
    - Information may be misfiled in wrong record
    - Information may be merged with another patient's record
  - Appointments may be lost
  - Standard Ambulatory Data Record (SADR) data may be attributed to wrong record

## **One-Week's trouble ticket activity**

558 total tickets closed

- 398 Patient Merge
- 61 Provider Merge
- 90 Demographics Issues
- 9 Patient Unmerge





# . . . and errors happen a lot

- Patient/Provider ID errors: most-frequent trouble tickets in the AHLTA (> 70% of trouble tickets/wk)
  - Misfiled clinical information
  - Misfiled encounters and telephone consults
  - Misfiled lab, pharmacy, x-ray orders or results
  - Inaccurate clinical privileges for providers
  - Encounter documentation errors
  - Unattributed credit

# Burden of identity errors

- 9.7 million records a/o May 2nd
  - 26% potential discrepancy rate (15-38%)
  - 2.5 million potential duplicates
  - 3.9 million potential discrepancies
    - 1.25 million missing patient identification (EDI-PN)
    - 650,000 missing PATCAT
    - 300,000 pseudo-social security numbers

Air Force assessment on all CHCS host sites except Wilford-Hall, Travis and Edwards



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# Air Force survey of CHCS identity data errors

A	B	C	D
HOST_TYPE	(All) ▼		
FACILITY_SIZE	(All) ▼		
FACILITY_TYPE	(All) ▼		
FACILITY_DMIS_CODE	(All) ▼		
MAJCOM_NAME	(All) ▼		
Values			
Row Labels	▼ Patient Population	Total Number of Error Records	Total Number of Error Fields
[-] Air Force	9,793,448	2,516,150	3,821,936
[+] PACAF	257,935	40,706	51,441
[+] SA East	4,648,223	1,270,828	2,191,196
[+] SA West	2,948,078	868,657	1,172,325
[+] USAFE	409,240	99,895	125,551
[-] AMC	1,529,972	236,064	281,423
MTF A	134,362	60,647	78,693
MTF B	108,402	10,574	11,165
MTF C	63,997	13,245	14,489
MTF E	345,807	30,640	33,421
MTF F	100,984	16,922	20,057
MTF G	390,043	57,151	70,610
MTF H	386,377	46,885	52,988
[+] (blank)			
Grand Total	9,793,448	2,516,150	3,821,936

Air Force assessment on all CHCS host sites except Wilford-Hall, Travis and Edwards



## Correction &amp; Tracking

[Work Queue \(I\)](#) | [Work Queue \(II\)](#) | [Reports](#) | [Data Management](#) | [Settings](#)

## Work Queue

## Work Queue (I)

No PID PM P/C

No PID NonPM P/C

No P/C

PID P/C

Non-Human

Search IEN

 Pager: total 61 page(s) of  
3028 record(s)

1

	PID	PATCAT	PSEUDO	DOB	GENDER	SSN	NonHuman	Error Count	Worked on?
10018								1	
10021								1	
10040								2	
10046								2	
10048								2	
10050								1	
10055								2	
10059								1	
10060								1	
10081								1	
10085								2	
10093								3	
10103								1	
10105								1	
10110								1	
10119								2	
10125								2	

Air Force assessment on all CHCS host sites except Wilford-Hall, Travis and Edwards

## Scorecard of facility: All DMIS (DMIS CODE: ----)



### 1. Facility at a Glance

Name	DMIS	Region	Command	Branch	Host Type	Size	Facility Type
All DMIS	---	---	---	---	---	---	---
As of Date	Patient Size	Records w/ Error	Records Error Pct.	Number Errors	Avg Errors Per Err Record	Avg Errors Per Record	Cost @ \$ Per Record
2008-05-02	8,866,216	2,515,226	25.37%	3,993,158	1.59	0.45	\$

### 2. Error Category Matrix

Category Total (Records)	560,604 (22.29%)	307,732 (12.23%)	711,903 (28.30%)	935,050 (37.18%)	12,245 (0.49%)	2,515,226 / 3,993,158
Non-Human	n/a	n/a	n/a	n/a	12,245 (0.31%)	12,245 (0.31%)
Missing PID	560,604 (14.04%)	307,732 (7.71%)	485,443 (12.16%)	n/a	n/a	1,353,779 (33.90%)
Missing PAT CAT	n/a	n/a	711,903 (17.83%)	n/a	n/a	711,903 (17.83%)
Pseudo SSN	90,182 (2.26%)	48,212 (1.21%)	1,610 (0.04%)	412,012 (10.32%)	n/a	552,016 (13.82%)
Missing DOB	5,084 (0.13%)	1,038 (0.03%)	163,231 (4.09%)	64 (0.00%)	n/a	169,417 (4.24%)
Missing Gender	19,637 (0.49%)	2,024 (0.05%)	158,031 (3.96%)	51,823 (1.30%)	n/a	231,515 (5.80%)
Missing SSN	181,642 (4.55%)	9,617 (0.24%)	312,118 (7.82%)	471,151 (11.80%)	n/a	974,528 (24.40%)
	No PID Primary	No PID NonPrimary	No PAT CAT	Other Incomplete Record	Non-Human	Row Total (Errors)



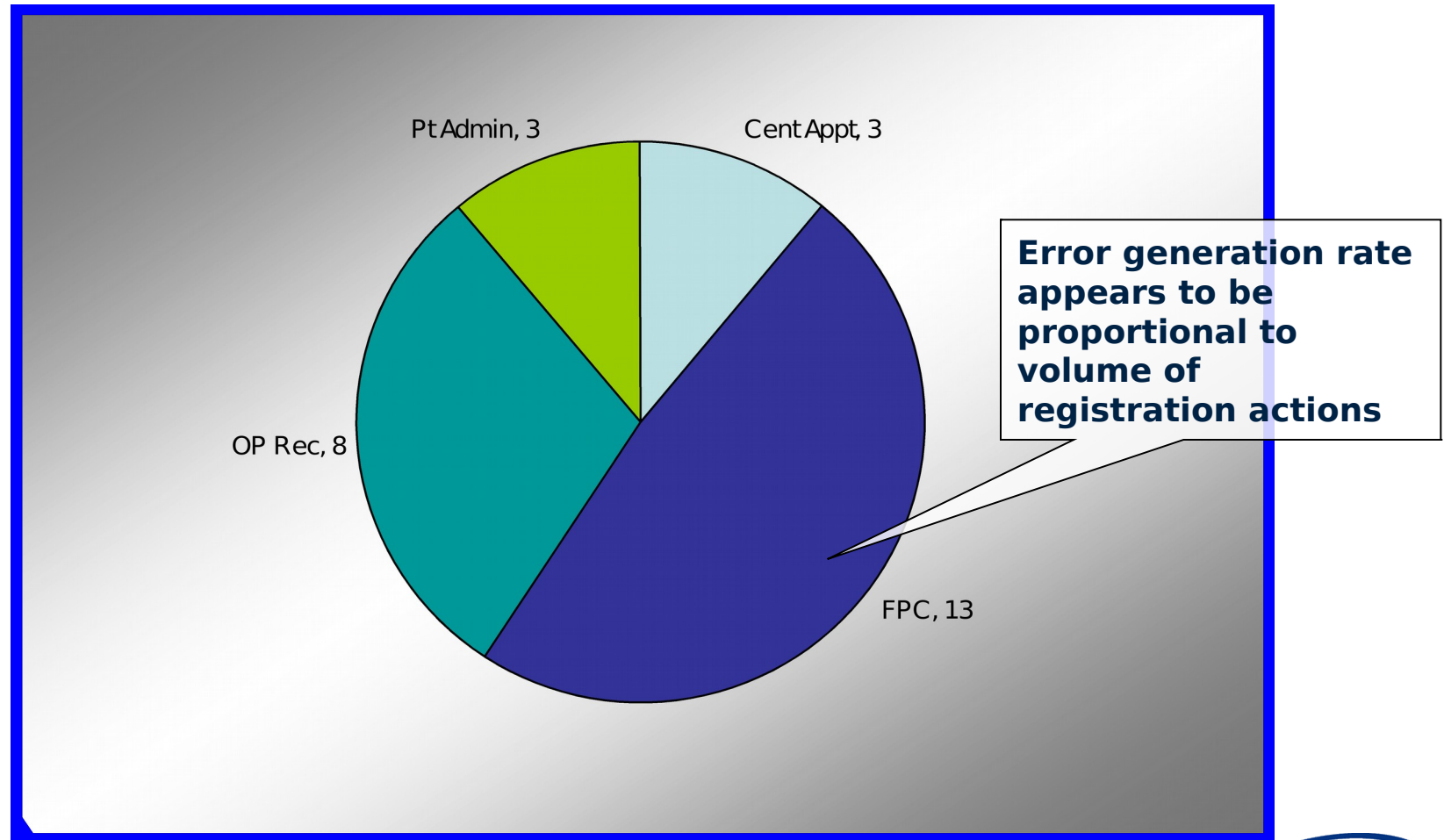
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# Some causes for individual misidentification

- Human unintended error
  - Typographic errors
    - Critical errors (person SSN, Last\_Name)
    - Less critical errors (MIDDLE\_Name, Gender, SPONSOR\_SSN, etc.) can become critical in combination
  - Inaccurate information from source
  - Lack of identity confirmation through DEERS interactions (DEERS eligibility checks being by-passed)
- Human Intentional error
  - Time pressure
  - Multiple eligibilities
  - Pseudo-SSN
- Automated errors
  - Manual processing of DEERS PIT notification errors, etc.



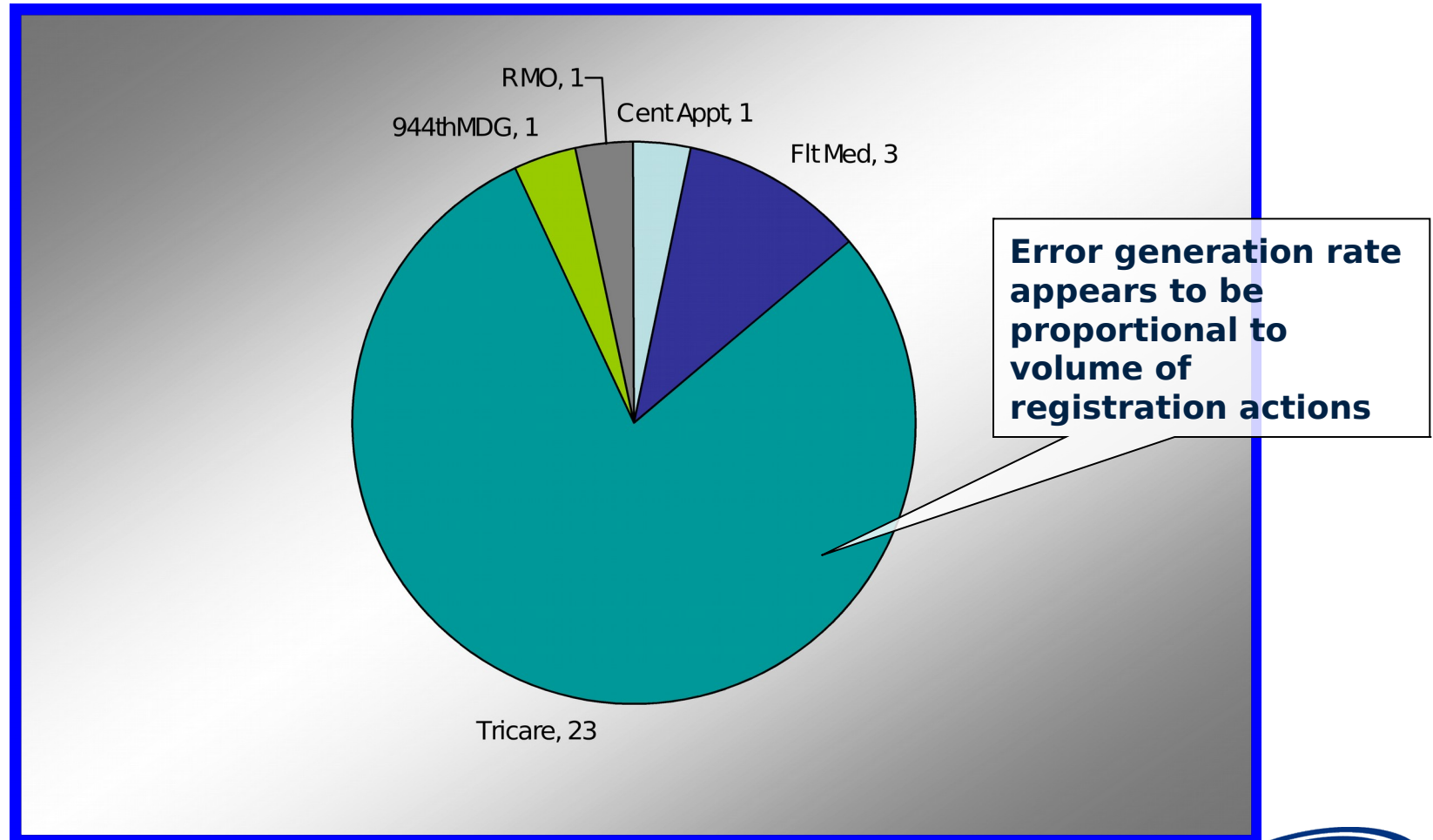
# Recent duplicate patients created by department



**Total Duplicates - 28**

**453 # of Users with Registration Capabilities**

# Recent duplicate patients created by department

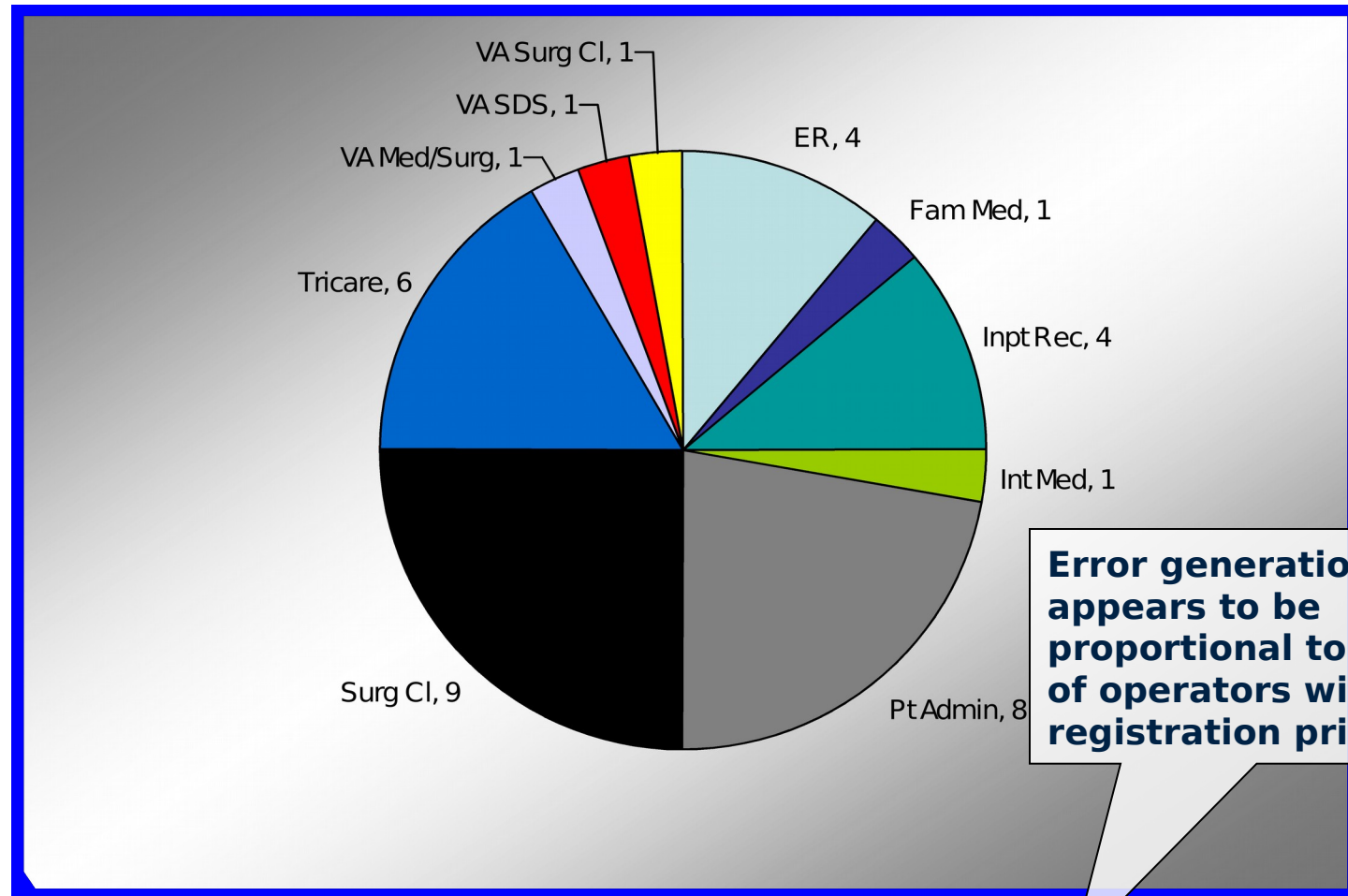


Total Duplicates - 29

658 - # of Users with Registration capability



# Recent duplicate patients created by department



**Total Duplicates - 36**

**1423 # of Users with Registration capabilities**

# Majority of errors are man-made

- Errors have been classified by result
- Ongoing assessment of error generation mechanism
- Manual process developed to correct errors
- Secure database for aggregating, analyzing and reporting
- Exploration of automated error correction
- Experience, Standardized processes, Training, and IT enablers
  - Air Mobility Command experience
    - Pre-study error rate: 25%
    - Post-training error rate: 15%

# Analogy to controlling hemorrhage

- Stop the bleeding
  - Identify the causes for identity errors and develop strategies to control them (low-hanging fruit)
- Prevent further bleeding
  - Correct the procedural and automated systems that facilitate identity errors
- Clean up the blood
  - Develop mechanisms to identify identity errors in the CDR (more complex, harder to locate)
  - Develop automated solutions to clean-up both CHCS/AHLTA host site data and the Central Data Repository (CDR) identity errors
- Go back and look again

# On the horizon

- MHS policy memorandum (Local level, CHCS registration)
  - Quality training, monitoring of operators
    - Limit CHCS ‘&’ Fileman access code in user accounts to those with training, experience and understanding\*
    - Do not ‘click through’ DEERS verification
    - Special attention to personal SSN, Last\_Name, Sponsor\_SSN
  - Monitoring and accountability
    - DODI 6040.40 reporting up the chain
    - Automated tools to assist leadership

\* Granting of the ampersand in one's CHCS user file information grants the privilege to initiate individual registrations. There is no training or quality requirement for this privilege



# On the horizon

- Enterprise-Wide Scheduling and Registration (Enterprise level DEERS, CHCS and CDR)
  - Multiple eligibilities in the same record
  - Facilitates registration completion
  - Allows addition to DEERS of newborns and civilian emergencies in order to obtain an EDI\_PN upon initial registration
- Modernize DEERS/EWS-R/CDR/CHCS communications
  - Auto-registration push of information from DEERS
  - Develop comprehensive individual identity strategy (how about pre-born benefits?)
- Eliminate non-standard processes, local-policies (Local and enterprise level)

# On the horizon

- Duplicate Patient Records Reduction initiative (CDR level)
  - Comb CDR for duplicate records
  - Analyze duplicates to determine patterns and similarities
  - Develop automated tools to correct duplicate records
- Artificial Intelligence Analysis of identity errors (CDR level)
  - Develop heuristic patterns to identify errors at the time of registration
- Air Force program (Local level)
  - Develop automated solutions for detection and correction of identity errors
  - Expand policy, training, reengineering, and tracking solutions to other Departments

Questions?

# Who are you?

- An individual
- An employee
- A member of a family
- A member of a beneficiary group
- A member of a study group
- A consumer of resources
- A provider of services
- A reporter of information



# Long-term planning

- Process
  - DEERS check early in process
    - Web-based DEERS lookup
  - Search by patient SSN before initiating registration
  - Relook at all search modules
  - Allow de-synchronization of dependent/sponsor pair
  - Eliminate hand-written forms
  - Central policy – less ‘county option’

# Long-term planning

- Policy
  - Consider development of central registration
  - Staffing and space
  - Require in-person registration
  - Ownership/performance metrics
  - Data quality monitoring
  - Relook at ‘mini-registration’ in ancillary settings
  - Relook at MCSC scheduling/registration incentives in contracts

# Long-term planning

- Training
  - Mandatory training
  - Certification
  - Periodic checks
  - Training staff

# Long-term planning

- Systems
  - Robust AHLTA Search module
  - Inability to de-synchronize dependent and sponsor pair
  - Measurements/reports
  - 24 hour 'registration'
    - HelpDesk

# CHCS Patient Registration

# Patient Lookup

Select PATIENT NAME: DASH,CAROL

Are you adding 'DASH,CAROL' as a new PATIENT? Y (YES)

SPONSOR NAME: DASH,BRUCE

Are you adding 'DASH,BRUCE' as a new SPONSOR? Y

# Sponsor Information

Patient Name: **DASH, CAROL**

Sponsor - Initial Information

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Sponsor Name: DASH, BRUCE

Sponsor FMP: 20

Sponsor Sex: **MALE**

Sponsor DOB: **24 Oct 1948**

Sponsor SSN: **800-00-0000**

Sponsor PATCAT: **F31** USAF RET LOS ENLISTED



# Patient Information

Sponsor Name: DASH,BRUCE  
Sponsor SSN: 800-00-0000

Patient - Initial Information

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Patient Name: DASH,CAROL  
FMP: **30**  
Sex: **FEMALE**  
DOB: **28 Oct 1948**  
SSN: **800-00-1111**  
PATCAT: **F43** (USAF FAM MBR RET)



# DEERS Eligibility Request

NEW DEERS INTERFACE

Sending Family Query for DASH,CAROL  
from 15 May 2008  
to 15 May 2008

Processing .....

# Mini Registration

Patient: **DASH, CAROL** Mini Registration  
FMP/SSN: **30/800-00-0000** DOB: **28Oct48** PATCAT: **F43** Sex: **F**

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Patient: **DASH, CAROL** DOB: **28 Oct 1948**  
PATCAT: **F43** (USAF FAM MBR RET) FMP: **30**  
Home Phone: W: SSN: **800-00-1111**  
Patient Addr: Sex: **FEMALE**  
City: St/Cntry: Zip:  
Sponsor: **DASH, BRUCE** Service: **AIR FORCE**  
FMP: **20** Sex: **MALE** Sponsor SSN: **800-00-0000**  
PATCAT: **F31** (USAF RET LOS ENLISTED) DOB: **28 Nov 1943**  
Command Sec: Rank:  
Local UIC:  
Duty Address:  
City: St/Cntry: Zip:  
Duty Phone: DSN:

# Full Registration Patient Info

Patient: **DASH, CAROL** Patient Information  
FMP/SSN: **30/800-00-0000** DOB: **28Oct48** PATCAT: **F43** Sex: **F**

-----  
Patient: **DASH, CAROL** DOB: **28 Oct 1948**  
PATCAT: **F43** (USAF FAM MBR RET)  
FMP: **30** SSN: **800-00-1111**  
Sex: **FEMALE** Religion:  
Ethnic Origin: **OTHER** Race: **WHITE**  
Mar Status: **MARRIED** Civ Occup:  
Command Int:  
Patient Addr:  
:  
City: St/Cntry: Zip:  
Home Phone: Work Phone:  
O/P Rec Loc:  
O/S Rec Loc:  
Primary Phy:  
Reg Comment:

# Full Registration Sponsor Info

Patient: **DASH, CAROL** Sponsor Information  
FMP/SSN: **30/800-00-0000** DOB: **28Oct48** PATCAT: **F43** Sex: **F**

-----  
Sponsor: **DASH, BRUCE** Service: **AIR FORCE**  
FMP: **20** Sex: **MALE** Sponsor SSN: **800-00-0000**  
PATCAT: **F31** (USAF RET LOS ENLISTED) DOB: **28 Nov 1943**  
Command Sec: Rank: **TECHNICAL SERGEANT**  
Mil Occup Code:  
  
DEERS UIC:  
Local UIC:  
Unit Loc:  
Lgth Service: Flying Status:  
Duty Address:  
:  
City: St/Cntry: Zip:  
Duty Phone: DSN:

# Full Registration EC/NOK Info

Patient: **DASH, CAROL** EC/NOK Information  
FMP/SSN: **30/800-00-0000** DOB: **28Oct48** PATCAT: **F43** Sex: **F**

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## EMERGENCY CONTACT INFORMATION

Name:

Relationship:

Address:

:

City:

St/Cntry:

Zip:

Phone:

## NEXT OF KIN INFORMATION

Name:

Relationship:

Address:

:

City:

St/Cntry:

Zip:

Phone:



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